PR-5. ASYMMETRIC PROPARGYLATION OF ALDEHYDES CATALYZED BY NEW CHIRAL LEWIS BASES

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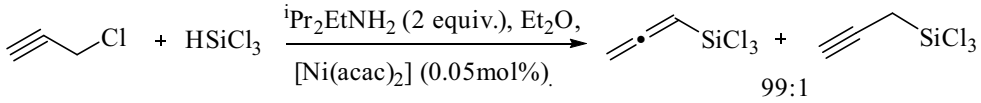
Optically active homopropagrylic alcohols are rare type of organic compounds due to the synthetic potential of acetylene group. They can be highly functional building blocks which found an application in the total synthesis of some biologically active compounds [1]. But the direct catalytic synthesis of this class of compounds appears to be challenging. Nowadays several methods of enantioselective propargylation have been developed. Some of these methods include using highly toxic reagents, such as tin compounds, some protocols requires an expensive reagents such as propargyl borolane. At this point using an allenylsilane as the propargylation agent is the most promising.



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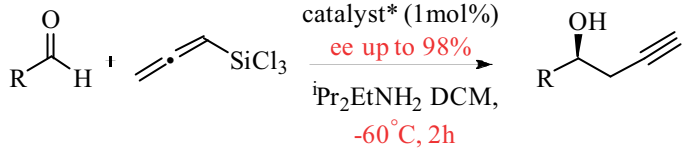
However, the development of catalysts for asymmetric propargylations using allenyltrichlorosilanes has proved much more challenging [2]. To our knowledge there are only two examples of using this reagent in asymmetric catalysis [2, 3].

In this work we've designed a series of new chiral Lewis Bases and show their excellent catalytic ability in the reaction of asymmetric propargylation of aromatic and α-unsaturated aldehydes.



*Structure of catalysts, their synthesis, optimization of reaction conditions and possible mechanisms will be discussed.

References

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